

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Small Satellite Operations (3)

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AUTONOMOUS OPERATIONS AND INITIAL OPERATION RESULTS OF SMALL SATELLITE
STSAT-2

Abstract

STSAT -2 satellite developed in Satellite Technology Research Center (SaTReC) of Korea Advanced Institute of Science and Technology(KAIST). The objectives of STSAT-2 consist of three missions. The satellite was developed as a low earth orbit 100kg satellite which will be launched by first Korean launch vehicle KSLV-1(Korea Space Launch Vehicle-1) in NARO domestic space center, Korea. The second, development of advanced space technology for small spacecraft and verify it on orbit. The third, development and operation of world-class space science payloads. STSAT-2 have two payloads. Main payload is DREAM (Dual-channel Radiometer for Earth and Atmosphere Monitoring) and the secondary payload is LRA (Laser Retroreflector Array). The DREAM mission objectives are to acquire brightness temperature of the earth at 23.8 GHz and 37 GHz, and to acquire physical parameters such as cold liquid water and water vapor after post-processing. The mission objective of spacecraft technologies is to develop a thermally, mechanically, electrically stable and radial resistant spacecraft system having high-precision attitude determination and control capability in a high eccentric ellipsoidal orbit (300 x 1,500km). This paper covers autonomous operations and results of small satellite STSAT-2.